



SEQUENCE LISTING

<110> Aventis Pharma Deutschland GmbH

<120> Process for identifying modulators of G protein coupled receptors

<130> AVE D-2000/A033 englisch

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<160> 17

<170> PatentIn Ver. 2.1

<210> 1

<211> 1080

<212> DNA

<213> Mus musculus

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Phe Ile Lys Gln Met Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu
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Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala
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Met Gln Ala Met Ile Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys
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Tyr Glu His Asn Lys Ala His Ala Gln Leu Val Arg Glu Val Asp Val
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Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser
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Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu
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Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg
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Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val
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Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser
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Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg Ser Glu Arg Arg
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Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val
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Ala Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn Glu Asn
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Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro
245 250 255

Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys Asp Leu
260 265 270

Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe Pro Glu
275 280 285

Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu
290 295 300

Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser
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His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala
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Glu Leu Lys Leu Leu Leu Gly Thr Gly Glu Ser Gly Lys Ser Thr

35			40			45									
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Phe Ile Lys Gln Met Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu

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Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala

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Met Gln Ala Met Ile Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys

85			90			95									
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Tyr Glu His Asn Lys Ala His Ala Gln Leu Val Arg Glu Val Asp Val

100			105			110									
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Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser

115			120			125									
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Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu

130			135			140									
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Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg

145			150			155			160						
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Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val

165			170			175									
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Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser

180			185			190									
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Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg Ser Glu Arg Arg

195			200			205									
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Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val

210			215			220									
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Ala Leu Ser Glu Tyr Asp Gln Val	Leu Val Glu Ser Asp Asn Glu Asn		
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Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro			
245	250	255	
Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys Asp Leu			
260	265	270	
Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe Pro Glu			
275	280	285	
Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu			
290	295	300	
Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser			
305	310	315	320
His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala			
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Ala Val Lys Asp Thr Ile Leu Gln Leu Asn Leu Lys Gln Tyr Glu Leu			
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Phe Ile Lys Gln Met Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu
50 55 60

Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala
65 70 75 80

Met Gln Ala Met Ile Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys
85 90 95

Tyr Glu His Asn Lys Ala His Ala Gln Leu Val Arg Glu Val Asp Val
100 105 110

Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser
115 120 125

Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu
130 135 140

Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg
145 150 155 160

Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val
165 170 175

Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser

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Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg Ser Glu Arg Arg		
195	200	205
Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val		
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Ala Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn Glu Asn		
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Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro		
245	250	255
Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys Asp Leu		
260	265	270
Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe Pro Glu		
275	280	285
Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu		
290	295	300
Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser		
305	310	315
His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala		
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Phe Ile Lys Gln Met Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu
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Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala
65 70 75 80

Met Gln Ala Met Ile Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys
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Tyr Glu His Asn Lys Ala His Ala Gln Leu Val Arg Glu Val Asp Val
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Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser
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Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu
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Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg
145 150 155 160

Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val
165 170 175

Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser
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Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg Ser Glu Arg Arg
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Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val
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Ala Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn Glu Asn
225 230 235 240

Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro
245 250 255

Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys Asp Leu
260 265 270

Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe Pro Glu
275 280 285

Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu
290 295 300

Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser
305 310 315 320

His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala
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Leu

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Leu	Glu	Gln	Lys	Lys	Gln	Asp	Arg	Gly	Glu	Leu	Lys	Leu	Leu	Leu	
35															

Gly	Pro	Gly	Glu	Ser	Gly	Lys	Ser	Thr	Phe	Ile	Lys	Gln	Met	Arg	Ile
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Ile	His	Gly	Ala	Gly	Tyr	Ser	Glu	Glu	Arg	Lys	Gly	Phe	Arg	Pro	
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Leu	Val	Tyr	Gln	Asn	Ile	Phe	Val	Ser	Met	Arg	Ala	Met	Ile	Glu	Ala
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Met	Glu	Arg	Leu	Gln	Ile	Pro	Phe	Ser	Arg	Pro	Glu	Ser	Lys	His	His

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Val Tyr Tyr Leu Ser His Leu Glu Arg Ile Thr Glu Glu Gly Tyr Val		
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Pro Thr Ala Gln Asp Val Leu Arg Ser Arg Met Pro Thr Thr Gly Ile		
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Asn Glu Tyr Cys Phe Ser Val Gln Lys Thr Asn Leu Arg Ile Val Asp		
195	200	205
Val Gly Gly Gln Lys Ser Glu Arg Lys Lys Trp Ile His Cys Phe Glu		
210	215	220
Asn Val Ile Ala Leu Ile Tyr Leu Ala Ser Leu Ser Glu Tyr Asp Gln		
225	230	235
Cys Leu Glu Glu Asn Asn Gln Glu Asn Arg Met Lys Glu Ser Leu Ala		
245	250	255
Leu Phe Gly Thr Ile Leu Glu Leu Pro Trp Phe Lys Ser Thr Ser Val		
260	265	270
Ile Leu Phe Leu Asn Lys Thr Asp Ile Leu Glu Glu Lys Ile Pro Thr		
275	280	285
Ser His Leu Ala Thr Tyr Phe Pro Ser Phe Gln Gly Pro Lys Gln Asp		
290	295	300
Ala Glu Ala Ala Lys Arg Phe Ile Leu Asp Met Tyr Thr Arg Met Tyr		
305	310	315
Thr Gly Cys Val Asp Gly Pro Glu Gly Ser Lys Lys Gly Ala Arg Ser		
325	330	335
Arg Arg Leu Phe Ser His Tyr Thr Cys Ala Thr Asp Thr Gln Asn Ile		
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Arg Lys Val Phe Lys Asp Val Arg Asp Ser Val Leu Ala Arg Tyr Leu		

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Asp Glu Ile Asn Leu Leu
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Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Gly Thr Gly
35 40 45

Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile His Gly
50 55 60

Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr
65 70 75 80

Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala Met Asp Thr
85 90 95

Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His Ala Gln Leu
100 105 110

Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr
115 120 125

Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys
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Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr
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Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu Asn Val Thr
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Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His Leu
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Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala
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Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp Ser
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Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu Asn
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Met Ala Cys Cys Leu Ser Glu Glu Ala Lys Glu Ala Arg Arg Ile Asn
1 5 10 15

Asp Glu Ile Glu Arg His Val Arg Arg Asp Lys Arg Asp Ala Arg Arg
20 25 30

Glu	Leu	Lys	Leu	Leu	Leu	Gly	Thr	Gly	Glu	Ser	Gly	Lys	Ser	Thr	
35						40			45						
Phe	Ile	Lys	Gln	Met	Arg	Ile	Ile	His	Gly	Ser	Gly	Tyr	Ser	Asp	Glu
50						55			60						
Asp	Lys	Arg	Gly	Phe	Thr	Lys	Leu	Val	Tyr	Gln	Asn	Ile	Phe	Thr	Ala
65						70			75			80			
Met	Gln	Ala	Met	Ile	Arg	Ala	Met	Asp	Thr	Leu	Lys	Ile	Pro	Tyr	Lys
						85			90			95			
Tyr	Glu	His	Asn	Lys	Ala	His	Ala	Gln	Leu	Val	Arg	Glu	Val	Asp	Val
						100			105			110			
Glu	Lys	Val	Ser	Ala	Phe	Glu	Asn	Pro	Tyr	Val	Asp	Ala	Ile	Lys	Ser
						115			120			125			
Leu	Trp	Asn	Asp	Pro	Gly	Ile	Gln	Glu	Cys	Tyr	Asp	Arg	Arg	Arg	Glu
						130			135			140			
Tyr	Gln	Leu	Ser	Asp	Ser	Thr	Lys	Tyr	Tyr	Leu	Asn	Asp	Leu	Asp	Arg
145						150			155			160			
Val	Ala	Asp	Pro	Ala	Tyr	Leu	Pro	Thr	Gln	Gln	Asp	Val	Leu	Arg	Val
						165			170			175			
Arg	Val	Pro	Thr	Thr	Gly	Ile	Ile	Glu	Tyr	Pro	Phe	Asp	Leu	Gln	Ser
						180			185			190			
Val	Ile	Phe	Arg	Met	Val	Asp	Val	Gly	Gly	Gln	Arg	Ser	Glu	Arg	Arg
						195			200			205			
Lys	Trp	Ile	His	Cys	Phe	Glu	Asn	Val	Thr	Ser	Ile	Met	Phe	Leu	Val
						210			215			220			
Ala	Leu	Ser	Glu	Tyr	Asp	Gln	Val	Leu	Val	Glu	Ser	Asp	Asn	Glu	Asn
225						230			235			240			
Arg	Met	Glu	Glu	Ser	Lys	Ala	Leu	Phe	Arg	Thr	Ile	Ile	Thr	Tyr	Pro
						245			250			255			
Trp	Phe	Gln	Asn	Ser	Ser	Val	Ile	Leu	Phe	Leu	Asn	Lys	Lys	Asp	Leu
						260			265			270			
Leu	Glu	Glu	Lys	Ile	Met	Tyr	Ser	His	Leu	Val	Asp	Tyr	Phe	Pro	Glu
						275			280			285			

Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu
290 295 300

Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser
305 310 315 320

His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala
325 330 335

Ala Val Lys Asp Thr Ile Leu Gln Leu Asn Leu Lys Glu Tyr Asn Leu
340 345 350

Val

<210> 13

<211> 359

<212> PRT

<213> Mus musculus

<400> 13

Met Thr Leu Glu Ser Met Met Ala Cys Cys Leu Ser Asp Glu Val Lys
1 5 10 15

Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg His Val Arg Arg Asp
20 25 30

Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Gly Thr Gly
35 40 45

Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile His Gly
50 55 60

Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr
65 70 75 80

Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala Met Asp Thr
85 90 95

Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His Ala Gln Leu
100 105 110

Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr
115 120 125

Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys

130	135	140
Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr		
145	150	155
Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln		
165	170	175
Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr		
180	185	190
Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met Val Asp Val Gly Gly		
195	200	205
Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu Asn Val Thr		
210	215	220
Ser Ile Met Phe Leu Val Ala Leu Ser Glu Tyr Asp Gln Val Leu Val		
225	230	235
240		
Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser Lys Ala Leu Phe Arg		
245	250	255
Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser Val Ile Leu Phe		
260	265	270
Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His Leu		
275	280	285
Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala		
290	295	300
Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp Ser		
305	310	315
320		
Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu Asn		
325	330	335
Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr Ile Leu Gln Leu Asn		
340	345	350
Leu Lys Glu Tyr Asn Leu Val		
355		

<210> 14

<211> 353

<212> PRT

<213> Mus musculus

<400> 14

Met Gly Cys Thr Leu Ser Ala Glu Asp Lys Glu Ala Arg Arg Ile Asn
1 5 10 15

Asp Glu Ile Glu Arg His Val Arg Arg Asp Lys Arg Asp Ala Arg Arg
20 25 30

Glu Leu Lys Leu Leu Leu Gly Thr Gly Glu Ser Gly Lys Ser Thr
35 40 45

Phe Ile Lys Gln Met Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu
50 55 60

Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala
65 70 75 80

Met Gln Ala Met Ile Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys
85 90 95

Tyr Glu His Asn Lys Ala His Ala Gln Leu Val Arg Glu Val Asp Val
100 105 110

Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser
115 120 125

Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu
130 135 140

Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg
145 150 155 160

Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val
165 170 175

Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser
180 185 190

Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg Ser Glu Arg Arg
195 200 205

Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val
210 215 220

Ala Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn Glu Asn
225 230 235 240

Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro
245 250 255

Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys Asp Leu
260 265 270

Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe Pro Glu
275 280 285

Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu
290 295 300

Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser
305 310 315 320

His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala
325 330 335

Ala Val Lys Asp Thr Ile Leu Gln Leu Asn Leu Lys Glu Tyr Asn Leu
340 345 350

Val

<210> 15
<211> 353
<212> PRT
<213> Mus musculus

<400> 15
Met Gly Cys Thr Leu Ser Ala Glu Glu Arg Glu Ala Arg Arg Ile Asn
1 5 10 15

Asp Glu Ile Glu Arg His Val Arg Arg Asp Lys Arg Asp Ala Arg Arg
20 25 30

Glu Leu Lys Leu Leu Leu Gly Thr Gly Glu Ser Gly Lys Ser Thr
35 40 45

Phe Ile Lys Gln Met Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu
50 55 60

Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala
65 70 75 80

Met Gln Ala Met Ile Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys		
85	90	95
Tyr Glu His Asn Lys Ala His Ala Gln Leu Val Arg Glu Val Asp Val		
100	105	110
Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser		
115	120	125
Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu		
130	135	140
Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg		
145	150	155
160		
Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val		
165	170	175
Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser		
180	185	190
Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg Ser Glu Arg Arg		
195	200	205
Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val		
210	215	220
Ala Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn Glu Asn		
225	230	235
240		
Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro		
245	250	255
Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys Asp Leu		
260	265	270
Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe Pro Glu		
275	280	285
Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu		
290	295	300
Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser		
305	310	315
320		
His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala		
325	330	335

Ala Val Lys Asp Thr Ile Leu Gln Leu Asn Leu Lys Glu Tyr Asn Leu
340 345 350

Val

<210> 16
<211> 353
<212> PRT
<213> Mus musculus

<400> 16
Met Gly Ala Gly Ala Ser Ala Glu Glu Lys Glu Ala Arg Arg Ile Asn
1 5 10 15

Asp Glu Ile Glu Arg His Val Arg Arg Asp Lys Arg Asp Ala Arg Arg
20 25 30

Glu Leu Lys Leu Leu Leu Gly Thr Gly Glu Ser Gly Lys Ser Thr
35 40 45

Phe Ile Lys Gln Met Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu
50 55 60

Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala
65 70 75 80

Met Gln Ala Met Ile Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys
85 90 95

Tyr Glu His Asn Lys Ala His Ala Gln Leu Val Arg Glu Val Asp Val
100 105 110

Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser
115 120 125

Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu
130 135 140

Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg
145 150 155 160

Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val
165 170 175

Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser

180	185	190
Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg Ser Glu Arg Arg		
195	200	205
Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val		
210	215	220
Ala Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn Glu Asn		
225	230	235
Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro		
245	250	255
Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys Asp Leu		
260	265	270
Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe Pro Glu		
275	280	285
Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu		
290	295	300
Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser		
305	310	315
His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala		
325	330	335
Ala Val Lys Asp Thr Ile Leu Gln Leu Asn Leu Lys Glu Tyr Asn Leu		
340	345	350

Val

<210> 17

<211> 360

<212> PRT

<213> Mus musculus

<400> 17

Met Gly Cys Leu Gly Asn Ser Lys Thr Glu Asp Gln Arg Asn Glu Glu		
1	5	10
		15

Lys Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg His Val Arg Arg		
20	25	30

Asp Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Gly Thr
35 40 45

Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile His
50 55 60

Gly Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys Leu Val
65 70 75 80

Tyr Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala Met Asp
85 90 95

Thr Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His Ala Gln
100 105 110

Leu Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe Glu Asn Pro
115 120 125

Tyr Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly Ile Gln Glu
130 135 140

Cys Tyr Asp Arg Arg Glu Tyr Gln Leu Ser Asp Ser Thr Lys Tyr
145 150 155 160

Tyr Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala Tyr Leu Pro Thr
165 170 175

Gln Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile Ile Glu
180 185 190

Tyr Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met Val Asp Val Gly
195 200 205

Gly Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu Asn Val
210 215 220

Thr Ser Ile Met Phe Leu Val Ala Leu Ser Glu Tyr Asp Gln Val Leu
225 230 235 240

Val Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser Lys Ala Leu Phe
245 250 255

Arg Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser Val Ile Leu
260 265 270

Phe Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His
275 280 285

Leu Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln
290 295 300

Ala Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp
305 310 315 320

Ser Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu
325 330 335

Asn Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr Ile Leu Gln Leu
340 345 350

Asn Leu Lys Glu Tyr Asn Leu Val
355 360